

1 / ~~23~~ (amended) A method of modifying the fatty acid composition of a plant host cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids, said method comprising:

E 1
growing a host plant cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof, said construct comprising a nucleotide sequence encoding a [fatty acid modifying] plant Δ -9 desaturase protein having any one of the amino acid peptide sequences shown in SEQ ID NOS 1-7 and SEQ ID NOS 9-11 under the control of regulatory elements functional in said plant cell during lipid accumulation under conditions which will promote the activity of said regulatory elements.

E 2
2 ~~21~~ The method of Claim ~~18~~ wherein said regulatory elements function preferentially in plant seed cells.

E 3
33 ~~26~~ The method of Claim ~~18~~ wherein said plant host cell is selected from the group consisting of rapeseed, sunflower, castor, cotton, *Cuphea*, peanut, soybean, oil palm and corn.

10
10 ~~25~~ (amended) A method of modifying the fatty acid composition of oil triglycerides in an oil producing plant host cell from a given weight percentage of saturated fatty acids to a difference weight percentage of saturated fatty acids comprising:

E 4
growing a host plant cell having a recombinant DNA construct integrated into the genome of said cell or parent cell thereof, said construct comprising a nucleotide sequence encoding a [fatty acid modifying] plant Δ -9 desaturase protein having any one of the amino acid peptide sequences shown as SEQ ID NOS 1-7 and SEQ ID NOS 9-11 under the control of regulatory elements functional in said plant cell during lipid accumulation under conditions which will promote the activity of said regulatory elements.

E 5
35. (amended) The method of Claim ~~33~~ further comprising the inhibition of endogenous plant Δ -9 desaturase.

E⁶ 11 36. The method of Claim ~~33~~¹⁰ wherein said regulatory elements function preferentially in plant seed cells.

E⁷ 12 41. The method of Claim ~~33~~¹⁰ wherein said plant host cell is selected from the group consisting of rapeseed, sunflower, castor, cotton, Cuphea, peanut, soybean, oil palm and corn.

Cancel Claim 68.

4, ~~68~~ (amended) The method of Claim [68] ~~68~~¹, wherein said plant host cell is a *Brassica* cell.

E⁸ 5 ~~70~~ The method of Claim [69] ~~68~~¹, wherein said plant host is a *Brassica* cell and wherein said construct encodes a *Brassica* [stearoyl-ACP] Δ -9 -desaturase in an antisense orientation with respect to said regulatory elements.

6 ~~71~~ (amended) The method of Claim [68] ~~68~~¹, wherein said host cell is from an oil producing plant.

E⁹ 7 ~~73~~ (amended) [A] The method of [modifying the fatty acid composition of a plant host cell from a given weight percentage of saturated fatty acids comprising] Claim ~~68~~¹, [growing a host plant cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof, said construct encoding a plant desaturase under the control of regulatory elements functional in said plant cell during lipid accumulation under conditions which will promote the expression of said desaturase.] wherein at least one of said [fatty acid modifying] plant Δ -9 desaturase and said regulatory elements is heterologous to said plant host cell.

8 ~~74~~ (amended) [A] The method of [modifying the fatty acid composition of a plant host cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids comprising] Claim ~~68~~¹,

E¹⁰ [growing a plant host cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof,] wherein said [construct encoding a fatty acid modifying plant desaturase derived from said plant host cell under the control of, and] nucleotide sequence is in an antisense orientation with respect to[,] said regulatory elements [functional in said plant cell during lipid accumulation under conditions which will promote the activity of said regulatory elements].

11 75. (amended) A method of modifying the fatty acid composition of a *Brassica* cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids, said method comprising

growing a *Brassica* cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof, said construct encoding a *Brassica* stearoyl-ACP desaturase under the control of, and in an antisense orientation with respect to, regulatory elements preferentially functional in plant seed under conditions which will promote the activity of said regulatory elements.

Cancel Claim 76.

13 77. (amended) The method of Claim [76] ~~35~~, wherein said plant host cell is a *Brassica* cell. 10 10

E 12 14 78. (amended) The method of Claim [77] ~~78~~, wherein said plant host is a *Brassica* cell and wherein said construct encodes a *Brassica* [stearoyl-ACP] Δ -9-desaturase in an antisense orientation with respect to said regulatory elements.

15 80. (amended) [A] The method [of modifying the fatty acid composition of oil triglycerides in an oil producing plant host cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids comprising] according to Claim ~~35~~, 10
[growing a host plant cell having a recombinant DNA construct integrated in to the genome of said cell or a parent cell thereof, said construct encoding a plant desaturase under the control of regulatory elements functional in said plant cell during lipid accumulation under conditions which will promote the expression of said desaturase,] wherein at least one of said [fatty acid modifying] plant Δ -9 desaturase and said regulatory elements is heterologous to said plant host cell.

E 14 16 81. (amended) [A] The method of [modifying the fatty acid composition of oil triglycerides in an oil producing plant host cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids comprising] Claim ~~35~~, 10

E¹⁴ Cont'
[growing a plant host cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof,] wherein said [construct encoding a fatty acid modifying plant desaturase derived from said plant host cell under the control of, and] nucleotide sequence is in an antisense orientation with respect to[,] regulatory elements [functional in said plant cell during lipid accumulation under conditions which will promote the activity of said regulatory elements].

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82. (amended) [A] The method of [modifying the fatty acid composition of oil triglycerides in a *Brassica* cell from a given weight percentage of saturated fatty acids to a different weight percentage of saturated fatty acids comprising] Claim 18]

E¹⁵
[growing a *Brassica* cell having a recombinant DNA construct integrated into the genome of said cell or a parent cell thereof, said construct encoding a *Brassica* stearyl-ACP desaturase under the control of, and in an antisense orientation with respect to], wherein said regulatory elements preferentially are functional in plant seed [under conditions which will promote the activity of said regulatory elements].

Add the following new Claims.

17
83. The method according to Claim 18 or 33, wherein said nucleotide sequence encodes the amino acid peptide KEIPDDYFVVLVGMITEEALPTYQTMLNT (amino acids 23-52 of SEQ ID NO: 2).

18
84. The method according to Claim 18 or 33, wherein said nucleotide sequence encodes the amino acid peptide DYADILEFLVGRWK (SEQ ID NO: 10).

19
85. The method according to Claim 18 or 33, wherein said nucleotide sequence is SEQ ID NO: 12.

E¹⁶ 20
86. The method according to Claim 18 or 33, wherein said nucleotide sequence encodes the mature plant desaturase protein having the amino acid sequence in SEQ ID NO: 13.

21
87. The method according to Claim 18 or 33, wherein said nucleotide sequence is SEQ ID NO: 15.

22
88. The method according to Claim 18 or 33, wherein said nucleotide sequence encodes the plant desaturase protein having the amino acid sequence in SEQ ID NO: 16.

23 89. The method according to Claim 18 or 33, wherein said nucleotide sequence is SEQ ID NO: 19.

E 16 24 90. The method according to Claim 18 or 33, wherein said nucleotide sequence encodes the plant desaturase protein having the amino acid sequence in SEQ ID NO: 20.

cont 25 91. The method according to Claim 18 or 33, wherein said Δ -9 desaturase protein has the amino acid sequence shown in SEQ ID NO: 20.

26 92. The method according to Claim 31, wherein said amino acid sequence is encoded by the DNA sequence shown in SEQ ID NO: 19. 4A

CONCLUSION

In view of the above amendment and remarks, it is submitted that this application is now ready for allowance. Early notice to that effect is solicited. If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (650) 328-4400.

Respectfully submitted,

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